

2009-2010 Influenza Epidemiology and Surveillance Weekly Status Report for Kansas

Week Ending February 20, 2010

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Executive Summary

D. Charles Hunt, MPH, State Epidemiologist and Director Bureau of Surveillance and Epidemiology Kansas Department of Health and Environment

Overview

Enhanced influenza surveillance continues to remain a critical component of our response to the 2009 H1N1 influenza A virus pandemic. We are in the time of year that is traditionally the peak of seasonal influenza, and although overall activity throughout the state remains low, some indicators are showing elevated potential influenza activity. The number of specimens submitted to the Kansas Health and Environmental Laboratories for influenza testing remains low; however the proportion of specimens testing positive for influenza A 2009 H1N1 increased from 13% to 16% for the week ending February 20th. The total number of hospital admissions due to pneumonia or influenza decreased approximately 14% from the previous week, though the overall rate of admissions did not change. The proportion of hospitalizations for patients less than five years of age remains elevated (21%) for the fifth consecutive week. The increase in hospitalizations for this age group may be due to other causes of pneumonia. Additionally, the proportion of deaths reported to KDHE that were attributed to pneumonia or influenza nearly doubled this week from last week. We will continue to monitor all influenza surveillance data to assess any changes or trends.

Outpatient Visits for Influenza-like Illness (ILINet)

Forty-eight (69%) of the 70 ILINet sites in Kansas reported data for the week ending February 20th. The statewide percentage of patients seeking care for ILI at these clinics was 2.4%. This is the third consecutive week that the statewide ILI rate has been above 2% (including data from previous weeks that were submitted after the respective reporting deadlines). Since the week ending January 23rd, the rate of ILI has increased by 25%. Reported ILI activity was highest in the northwest and southwest regions of the state (5.9% and 2.7%, respectively). Many sites did not submit ILI data by the reporting deadline; the regional and statewide percentages may rise or fall after these sites submit data. Nationally, the proportion of outpatient visits for influenza-like illness (ILI) was 2.1% for the week ending February 13th.

Hospital Admissions for Pneumonia or Influenza (EMSystems)

For the week ending February 20th, 81 (61%) of 132 hospitals reported 349 patients admitted for pneumonia or influenza. Seventy-five (21%) of these admissions were among children less than 5 years of age. This is the fifth consecutive week in which greater than 20% of hospitalizations were among this age group. The increase may be due to hospitalizations for other seasonal causes of pneumonia, such as Respiratory Syncytial Virus (RSV), which primarily affects young children. The statewide rate of hospital admissions per 100 bed-days remained essesentially unchanged from the week ending February 13 (0.73 to 0.71). The Kansas City Metro, northeast, north central, and northeast regions reported an increase in the rate of hospital admissions per 100 bed-days, while the northwest, southeast, and south central regions reported a decrease.

Executive Summary (continued)

Mortality Due to Pneumonia or Influenza

Forty-five (10%) of the 437 deaths reported to KDHE during the week ending February 20th were due to pneumonia or influenza. This is an increase from the week ending February 13th when 6% of all deaths in Kansas were attributed to pneumonia or influenza. A majority of the deaths reported this week continued to occur in individuals aged 65 years and older; however, one death was reported in a person between the ages of 5-18 years, one in a person between the ages of 50-64 years.

Self-reported Influenza-like Illness

No new data were available for this week's surveillance report.

School Absenteeism

For the school week ending February 19th, 85 (81%) of the 105 Kansas counties reported school absenteeism data. The statewide percentages for elementary and middle schools both increased slightly from 9% and 10%, respectively, to 11%. High schools reporting 10% or greater absenteeism decreased slightly from 15% to 14%. Many counties did not submit their data by the reporting deadline; statewide and regional percentages may rise or fall after these non-reporting counties submit data. Additionally, these numbers represent total absenteeism from all causes, not only absenteeism due to influenza.

Laboratory-based Surveillance

During the week ending February 20th, 56 specimens were tested at KDHE Laboratories (KHEL). Of these, nine (16%) were positive for influenza A (2009 H1N1), representing an increase over the previous week. No other influenza A or B viruses were detected.

Since October 4th, a total of 2,431 specimens have been submitted to KHEL for testing. Of these, 918 (38%) have tested positive for influenza A (2009 H1N1).

Population Vaccinated Against 2009 H1N1 Influenza A Virus

As of February 20th, 564,549 doses of 2009 H1N1 vaccine were reported to have been administered to Kansans, which comprises 20% of the state's population. The charts show the cumulative number of Individuals vaccinated at the end of each week by region as well as the cumulative percentage of each region's population that has been immunized. The proportion of persons vaccinated ranged from 16% in the southeast region to 25% in the northwest region.

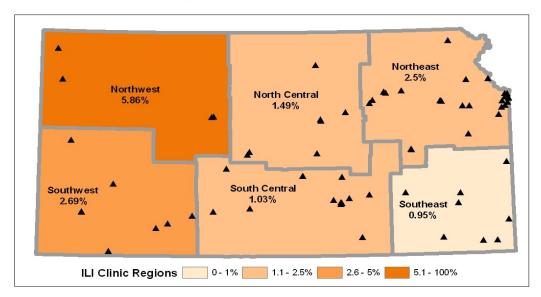
It is important to note that numbers of people vaccinated are reported by the county in which they received the vaccination; therefore, cumulative numbers and rates may be skewed slightly, as individuals are divided into regions based on the site of vaccination. These charts do not account for individuals who were vaccinated in a region other than the region in which they reside. Vaccine administration data may change each week because of data submitted after the reporting deadline or because of corrections made to previously submitted data.

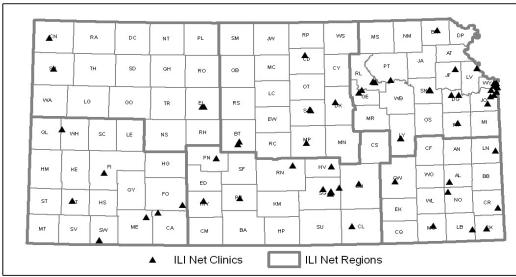
Outpatient Influenza-like Illness (Surveillance Conducted via ILINet) Week ending February 20, 2010



Percentage of Visits for Influenza-like Illness (ILI) Reported by ILINet Sites, by Region February 14, 2010 - February 20, 2010



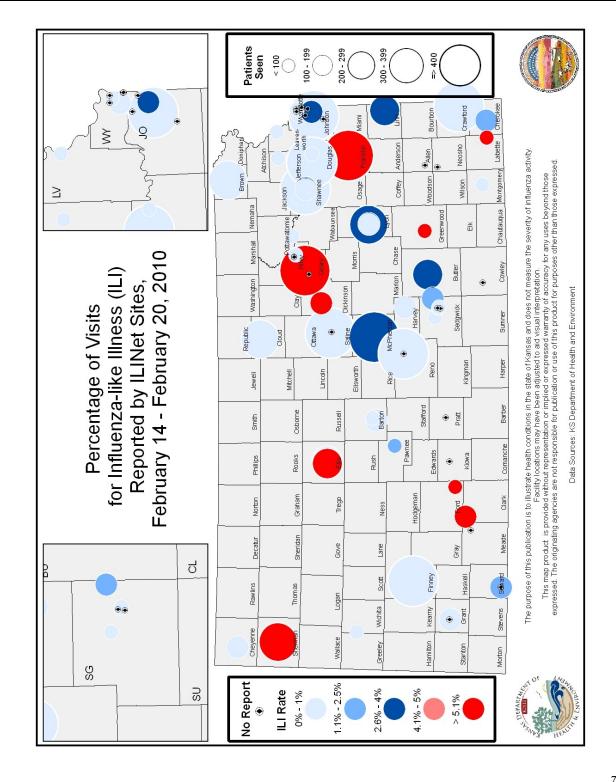




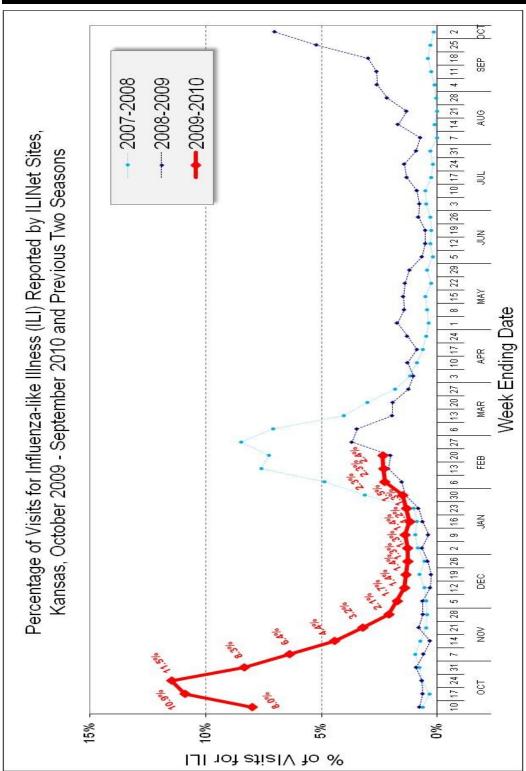
The purpose of this publication is to illustrate health conditions in the state of Kansas and does not measure the severity of influenza activity. This map product is provided without representation or implied or expressed warranty of accuracy for any uses beyond those expressed. The originating agencies are not responsible for publication or use of this product for purposes other than those expressed.

Data Sources: KS Department of Health and Environment

Outpatient Influenza-like Illness (Surveillance Conducted via ILINet) Week ending February 20, 2010

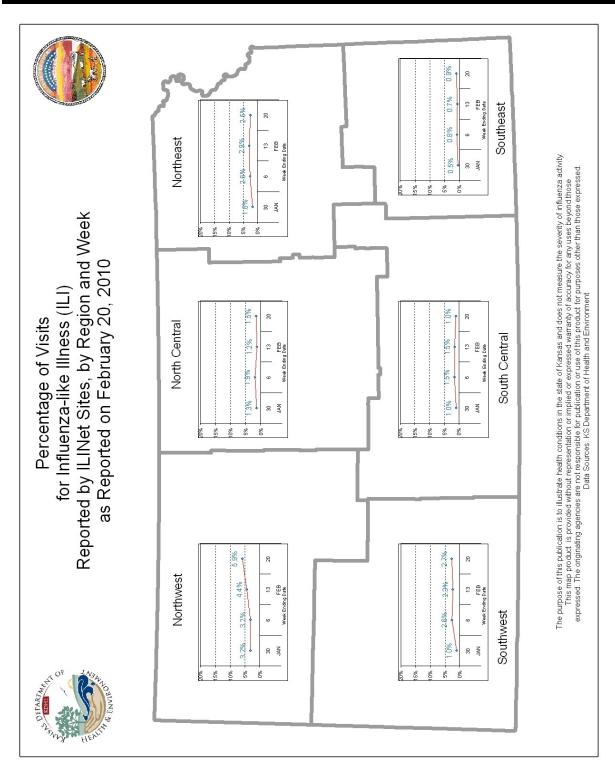


Outpatient Influenza-like Illness (Surveillance Conducted via ILINet) Week ending February 20, 2010

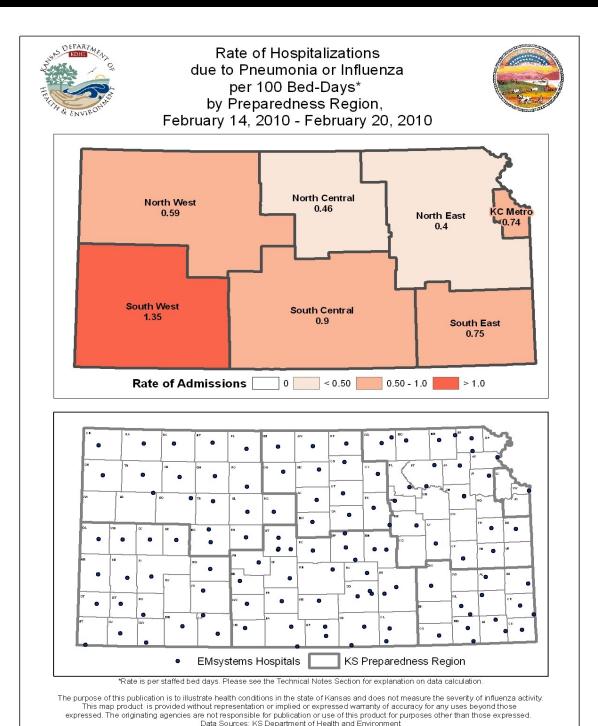


was unique to the 2008-2009 season; data for that week has been excluded from the chart. ILINet sites vary in location, numober 10, 2009. Week 40 of 2008 ended October 4, 2008, and week 40 of 2007 ended October 6, 2007, and so on. Week 53 lears are plotted according to week number corresponding to the 2009-2010 week ending date. Week 40 of 2009 ended Oc-The X-axis represents the week ending dates for the 2009-2010 surveillance year. Data from the previous two surveillance ber, and type (student health, family practice, etc.) each season as new sites are enrolled and former sites are deactivated.

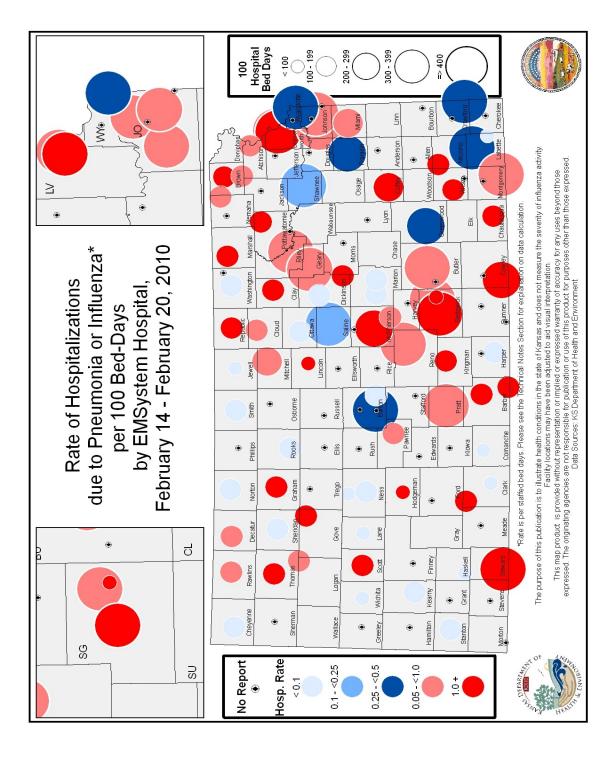
Outpatient Influenza-like Illness (Surveillance Conducted via ILINet) Week ending February 20, 2010



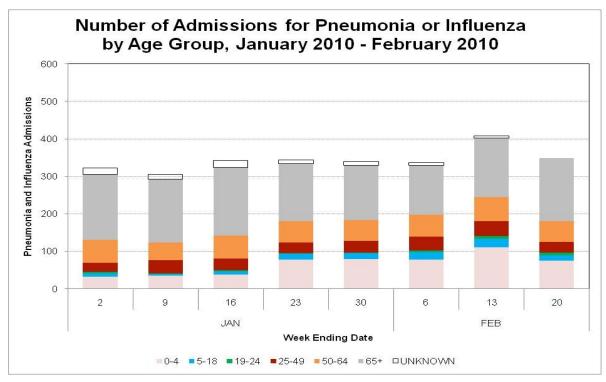
Hospital Admissions (Surveillance Conducted via EMSystems) Week ending February 20, 2010

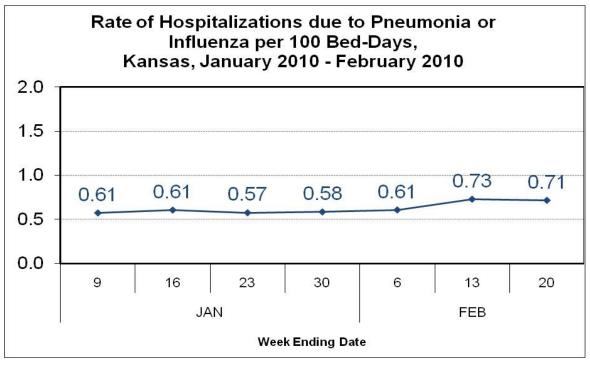


Hospital Admissions (Surveillance Conducted via EMSystems) Week ending February 20, 2010

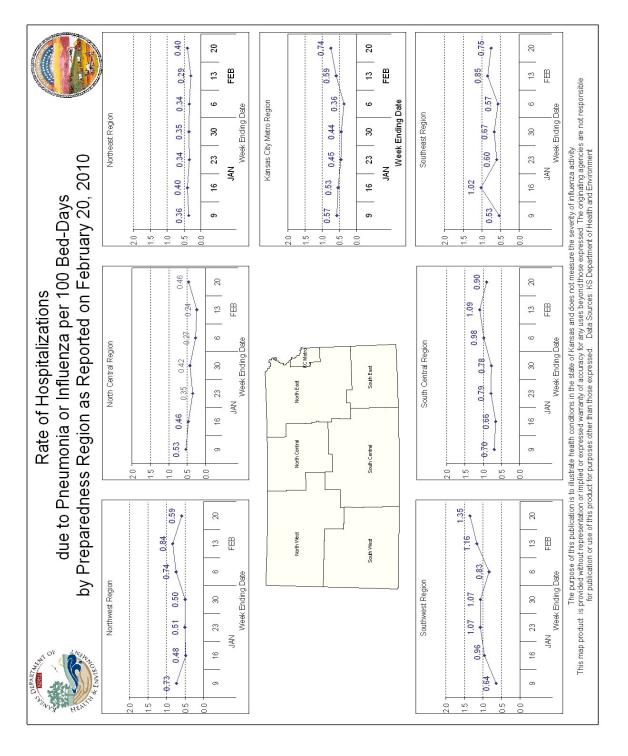


Hospital Admissions (Surveillance Conducted via EMSystems) Week ending February 20, 2010

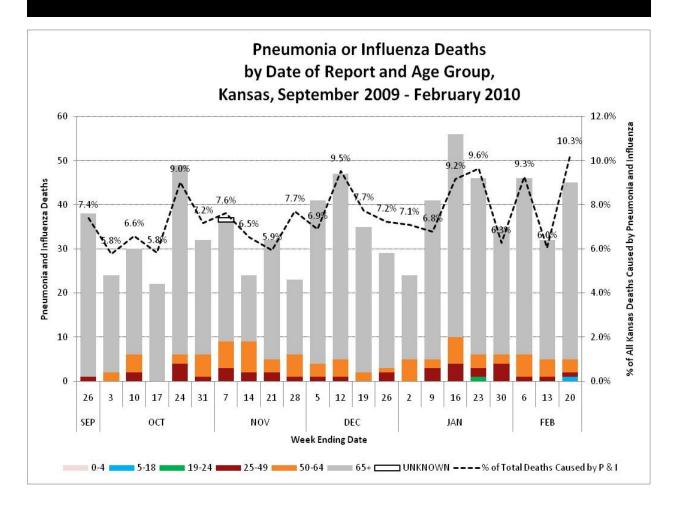




Hospital Admissions (Surveillance Conducted via EMSystems) Week ending February 20, 2010



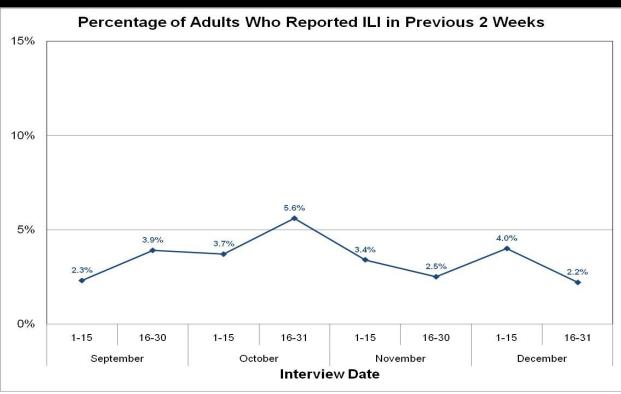
Mortality Due to Pneumonia or Influenza (Surveillance Conducted via KDHE Vital Statistics)

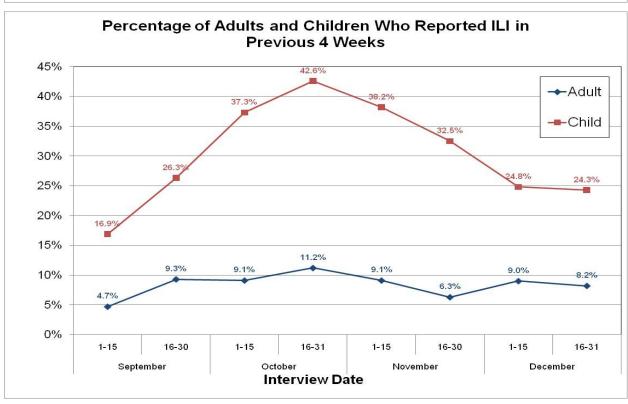


Cumulative Number of Pneumonia or Influenza Deaths Reported by
Age Group, September 26, 2009—February 20, 2010

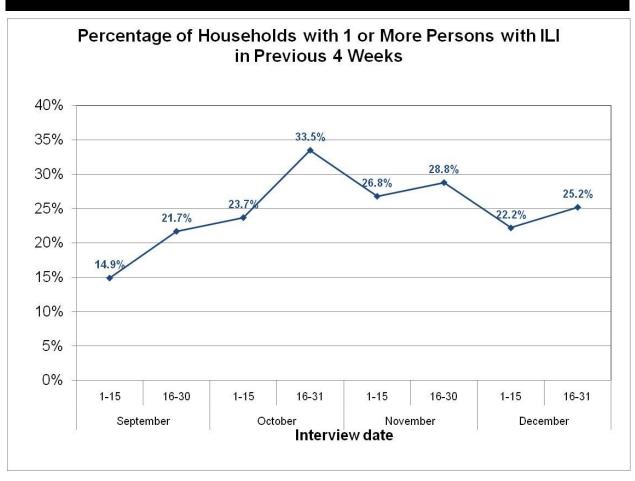
0-4	5-18	19-24	25-49	50-64	65+	Unknown	Total
0	1	1	36	74	675	1	788

Self-Reported Influenza-like Illness (Surveillance Conducted via KDHE BRFSS)

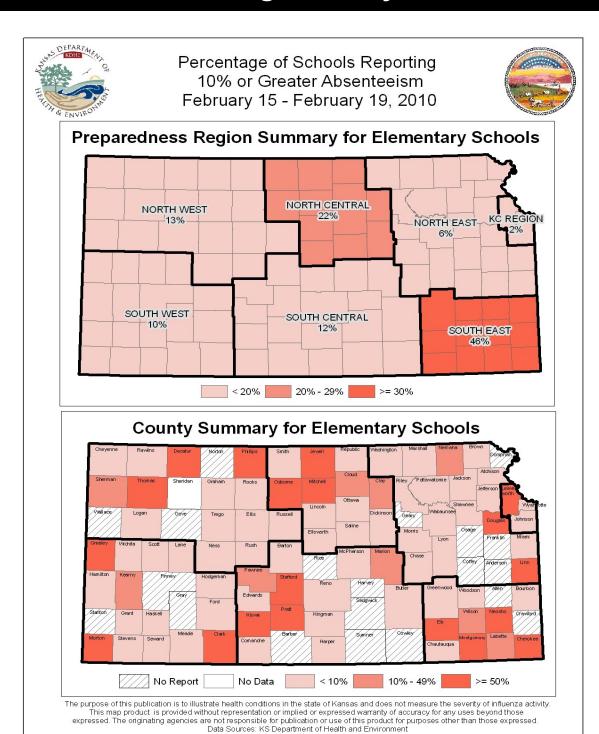




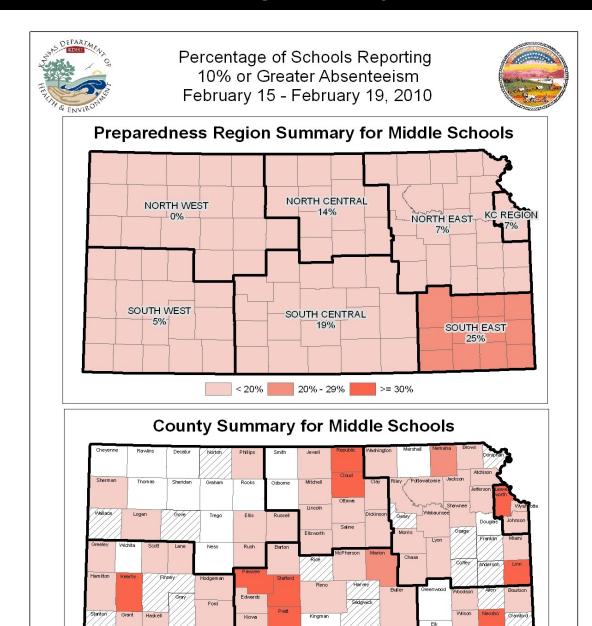
Self-Reported Influenza-like Illness (Surveillance Conducted via BRFSS)



School Absenteeism (Surveillance Conducted via Health Departments) Week ending February 19, 2010



School Absenteeism (Surveillance Conducted via Health Departments) Week ending February 19, 2010



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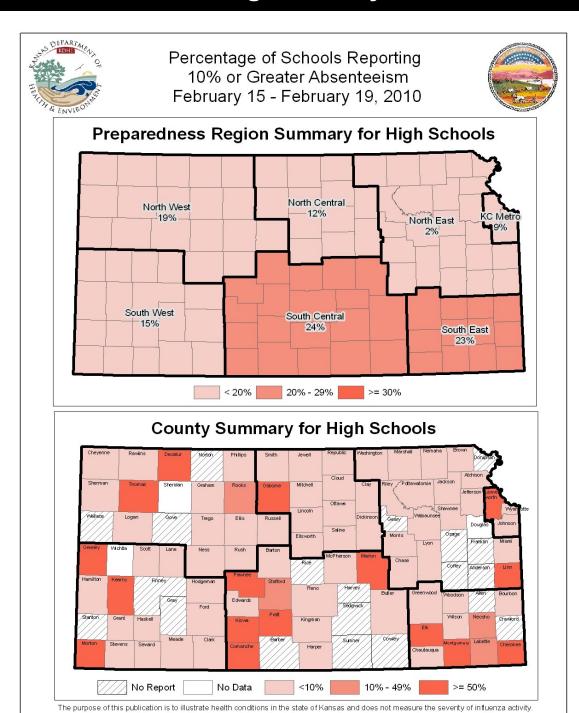
Data Sources: KS Department of Health and Environment

No Data

< 10%

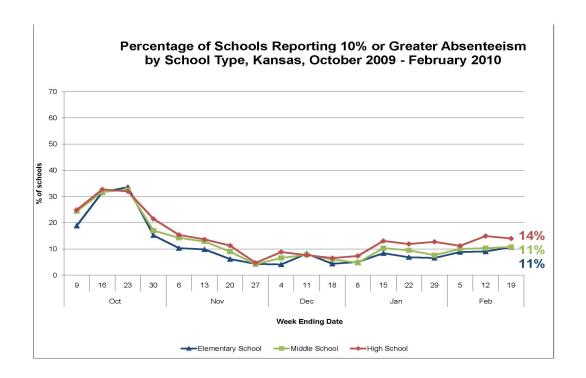
No Report

School Absenteeism (Surveillance Conducted via Health Departments) Week ending February 19, 2010

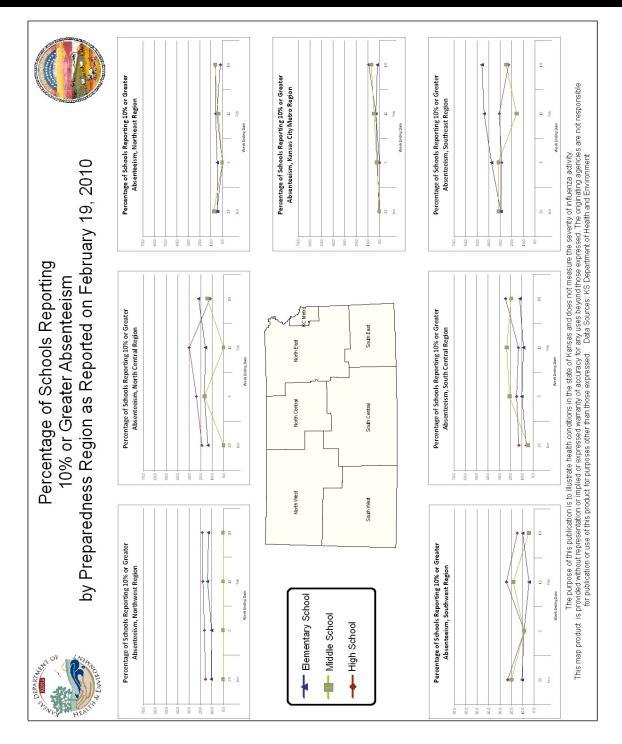


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School Absenteeism (Surveillance Conducted via Health Departments) Week ending February 19, 2010*



School Absenteeism (Surveillance Conducted via Health Departments) Week ending February 19, 2010*



Percentage of Schools Reporting 10% or Greater Absenteeism by Category and County, Week ending February 19, 2010

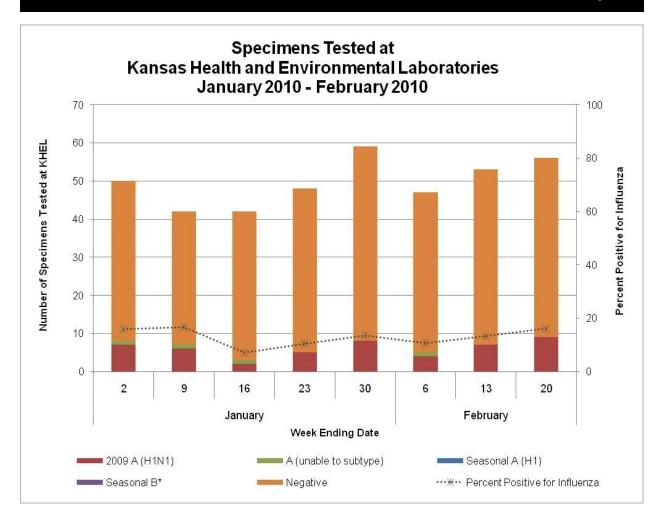
County	Elementary School	Middle School	High School
ALLEN			
ANDERSON			
ATCHISON	0%	0%	0%
BARBER			
BARTON	0%	0%	0%
BOURBON	0%	0%	0%
BROWN	0%	0%	0%
BUTLER	4%	0%	8%
CHASE	0%	0%	0%
CHAUTAUQUA	0%	0%	0%
CHEROKEE	83%	50%	50%
CHEYENNE	0%		0%
CLARK	100%	0%	0%
CLAY	25%	0%	0%
CLOUD	40%	100%	0%
COFFEY			
COMANCHE	0%		100%
COWLEY			
CRAWFORD			
DECATUR	100%		100%
DICKINSON	0%	0%	0%
DONIPHAN			
DOUGLAS	50%		
EDWARDS	0%	0%	0%
ELK	100%		50%
ELLIS	0%	0%	0%
ELLSWORTH	0%	0%	0%
FINNEY			
FORD	0%	0%	0%
FRANKLIN			
GEARY			
GOVE			
GRAHAM	0%		0%
GRANT	0%	0%	0%
GRAY			

County	Elementary School	Middle School	High School
GREELEY	100%	0%	100%
GREENWOOD	0%		0%
HAMILTON	0%	0%	0%
HARPER	0%		0%
HARVEY			
HASKELL	0%	0%	0%
HODGEMAN	0%	0%	0%
JACKSON	0%	0%	0%
JEFFERSON	0%	0%	0%
JEWELL	100%	0%	0%
JOHNSON	0%	0%	0%
KEARNY	33%	50%	50%
KINGMAN	0%		0%
KIOWA	67%	0%	100%
LABETTE	17%	33%	33%
LANE	0%	0%	0%
LEAVENWORTH	100%	100%	100%
LINCOLN	0%	0%	0%
LINN	80%	100%	50%
LOGAN	0%	0%	0%
LYON	0%	0%	0%
MARION	40%	40%	60%
MARSHALL	0%		0%
MCPHERSON	0%	0%	0%
MEADE	0%	0%	0%
MIAMI	0%	0%	0%
MITCHELL	100%	0%	0%
MONTGOMERY	71%	50%	50%
MORRIS	0%	0%	0%
MORTON	50%	0%	67%
NEMAHA	29%	14%	0%
NEOSHO	67%	50%	33%
NESS	0%		0%
NORTON			
OSAGE			

Percentage of Schools Reporting 10% or Greater Absenteeism by Category and County, Week ending February 19, 2010

County	Elementary School	Middle School	High School
OSBORNE	100%		100%
OTTAWA	0%	0%	0%
PAWNEE	25%	100%	100%
PHILLIPS	50%	0%	0%
POTTAWATOMIE	0%	0%	0%
PRATT	100%	100%	100%
RAWLINS	0%		0%
RENO	0%	0%	0%
REPUBLIC	0%	100%	0%
RICE			
RILEY	0%	0%	0%
ROOKS	0%		33%
RUSH	0%	0%	0%
RUSSELL	0%	0%	0%
SALINE	0%	0%	0%
SCOTT	0%	0%	0%
SEDGWICK			
SEWARD	0%	0%	0%
SHAWNEE	0%	0%	0%
SHERIDAN			
SHERMAN	33%	0%	0%
SMITH	0%		0%
STAFFORD	67%	67%	33%
STANTON			
STEVENS	0%	0%	0%
SUMNER			
THOMAS	100%		100%
TREGO	0%		0%
WABAUNSEE	0%	0%	0%
WALLACE			
WASHINGTON	0%	0%	0%
WICHITA	0%		
WILSON	40%	0%	0%
WOODSON	0%	0%	0%
WYANDOTTE	0%	0%	0%

Laboratory Testing (Surveillance Conducted via Kansas Health and Environmental Laboratories)



Kansas Department of Health and Environmental Laboratories October 4, 2009 — February 20, 2010

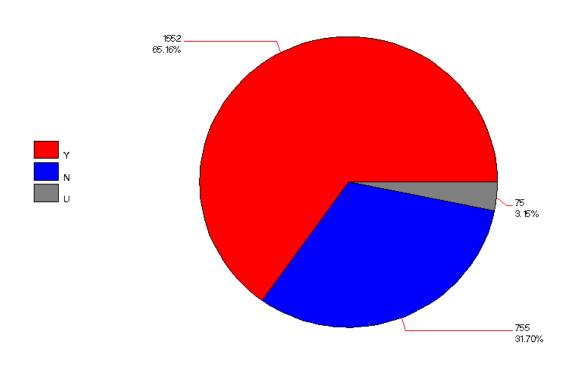
No. of specimens submitted for testing at KHEL 2,431

No. of specimens testing positive for influenza A (2009 H1N1) 918 (38%)

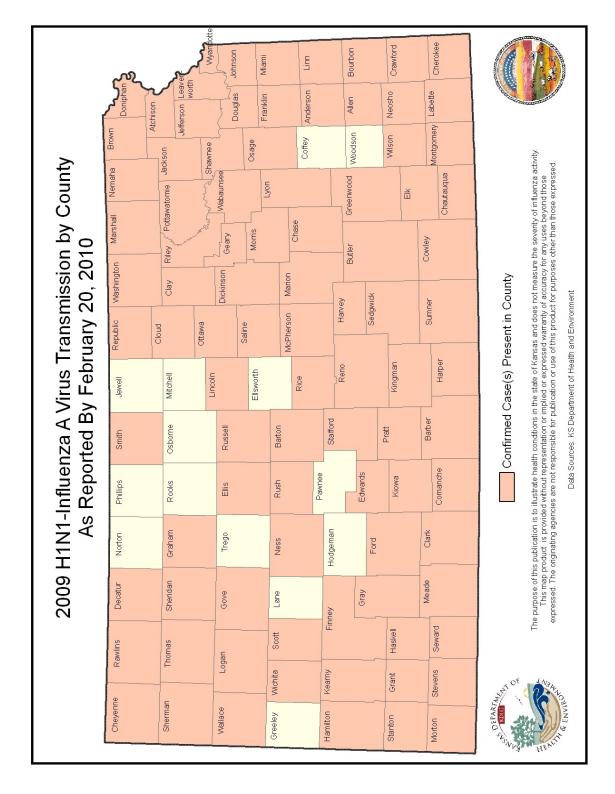
Laboratory Testing (Surveillance Conducted via Kansas Health and Environmental Laboratories)

Influenza Specimens Tested at KHEL by Hospitalization Status

October 4, 2009 — February 20, 2010 FREQUENCY of Hospitalized



Descriptive Epidemiology of KHEL-Confirmed H1N1 Cases

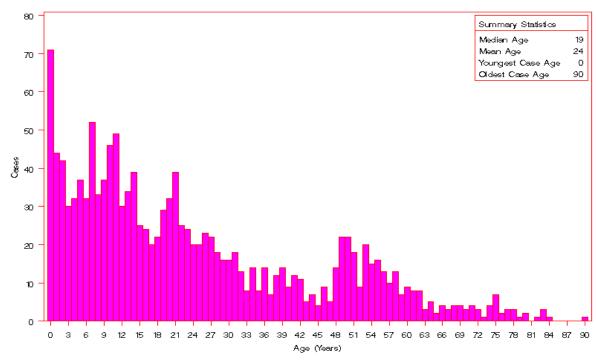


Descriptive Epidemiology of KHEL-Confirmed H1N1 Cases

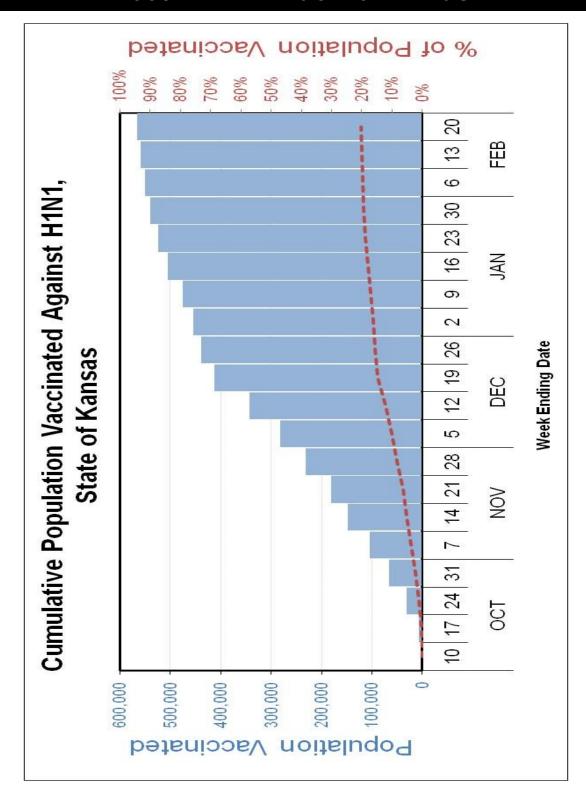
Patient Characteristics for Laboratory-Confirmed H1N1 Cases (N = 1422)

Median Age (Years)	19	
Age Range (Years)	<1 to 90	
Age Groups	Percent (%) of cases	Rate per 100,000 population
<5 Years	15	109
5 to 24 Years	46	82
25 to 49 Years	23	34
50 to 64 Years	12	35
65+ Years	4	15
Male	46	46
Female	54	54
Hispanic or Latino	17	97
Races		
White	73	41
Black	8	58
Asian/Pacific Islander	3	56
American Indian/Alaska Native	<1	18
Mixed Race	2	(unknown)
Hospitalized	49	
Died	2	

Age Distribution of Laboratory Confirmed Cases as of February 20, 2010



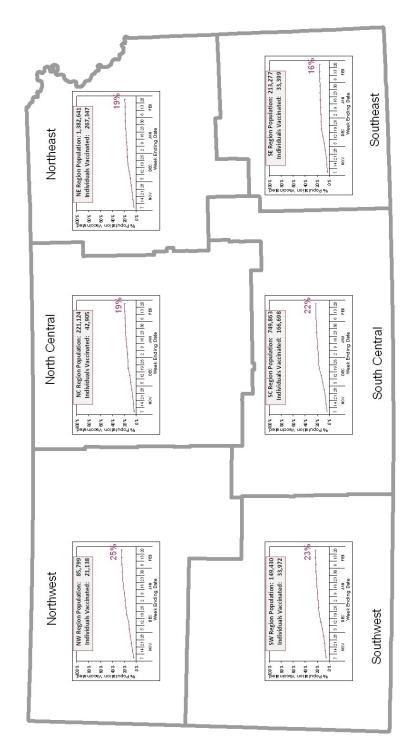
Population Vaccinated Against 2009 H1N1 Influenza A Virus



Population Vaccinated Against 2009 H1N1 Influenza A Virus



Cumulative Population Vaccinated Against H1N1, by Region and Week as Reported on February 20, 2010



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Data Souroes: KS Department of Health and Environment.



Technical Notes

Outpatient Influenza-like Illness Surveillance (ILINet)

Information on patient visits to health care providers for influenza-like illness is collected through the US Outpatient Influenza-like Illness Surveillance Network (ILINet). For this system, ILI is defined as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat in the absence of a KNOWN cause other than influenza.

ILINet clinics in Kansas report the number of patients seen with influenza-like illness each week. The information reflects data collected for the week ending the previous Saturday. As of January 2, 2010, seventy sites are enrolled in ILINet in Kansas. The maps and charts on pages 6-9 show the percentage of ILI visits reported by region and by site by week ending date. Each percentage was calculated by dividing the number of patients seen with ILI at the clinic by the total number of patients seen and multiplying by 100.

Influenza-like illness data are collected from Sunday through Saturday of each week. Each participating clinic is requested to summarize the data weekly and submit the data by noon on Tuesday of the following week. The information on these charts may change each week because of data that may have been submitted after the reporting deadline.

Hospital Admissions for Pneumonia or Influenza Surveillance (EMSystems)

Hospitals throughout Kansas submit information to the Kansas Hospital Association (KHA) through EM-Systems, a secure, online reporting system. One hundred and thirty-one (131) hospitals that have access to EMSystems are included in this surveillance program. KDHE has partnered with KHA to collect aggregate information on patients hospitalized for pneumonia or influenza.

The maps and graphs on pages 10-13 show the rate of hospital admissions for pneumonia or influenza reported by region and by hospital by week ending date. Each rate was calculated by dividing the number of patients admitted to the hospital with pneumonia or influenza by bed days. The denominator bed days was calculated by multiplying the number of staffed beds by seven.

Mortality Due to Pneumonia or Influenza

The Office of Vital Statistics within the Bureau of Public Health Informatics at KDHE receives and preserves vital records for events (births, deaths, marriages, and divorces) which occur in Kansas. The mortality data on page 14 reflects the number and percentage of persons whose primary or underlying cause of death was attributed to pneumonia and / or influenza.

Self-Reported Influenza-like Illness

The Behavioral Risk Factor Surveillance System (BRFSS), which is coordinated and partially funded by the Centers for Disease Control and Prevention, is the largest continuously conducted telephone surveyin the world. It is conducted in every state, the District of Columbia, and several United States territories. The first BRFSS survey in Kansas was conducted as a point-in-time survey in 1990, and Kansas has conducted the BRFSS survey annually since 1992.

Beginning in September 2009, the BRFSS questionnaire was revised to include questions to assess influenza-like illness among adult respondents and other members of the household. The graphs on pages 15 and 16 provide the percent of adults, children, and households reporting ILI.

School Absenteeism Surveillance

Data are collected by local health departments (LHDs) during each school week. LHDs report the number of schools with 10% or greater absenteeism and the total number of schools that submit data each week. LHDs submit data to KDHE by noon on Tuesday of the following week.

Technical Notes (continued)

School Absenteeism Surveillance (continued)

LHDs report county data in three categories: elementary school (i.e. K-5), middle school (i.e., 6-8), and high school (i.e., 9-12). The designated school category is based upon the majority of grades within the school; for instance, a school consisting of grade levels K-6 would be classified as an elementary school.

Percentages of school absenteeism by county shown on pages 17-23 may be unstable and changes over time should be interpreted with caution. "No report" classification indicates the LHD failed to report any data to KDHE. "No data" classification indicates that either the school(s) did not report any data to the LHD or there are no schools in the county for the specific school category.

Laboratory Testing at Kansas Department of Health and Environmental Laboratories (KHEL) The information on pages 24-25 represents data reported to KDHE for the week ending the previous Saturday. Prior to September 1, 2009 persons with symptoms consistent with ILI were tested at KHEL. Beginning September 1, specimens were only tested if the person was hospitalized, had died and the cause of death was suspected to be influenza, or if the person was seen at an ILINet Clinic Site.

Descriptive Epidemiology for Laboratory-Confirmed H1N1 Cases at KHEL

The information on pages 26-27 represent data reported to KDHE for the week ending the previous Saturday. Only cases that were laboratory confirmed at KHEL are included.

Population Vaccinated Against H1N1 Influenza A Virus

Vaccination sites throughout Kansas submit information on the number of H1N1 vaccine doses administered each week. The charts on pages 28-29 show the cumulative number of individuals vaccinated at the end of each week in each region of the state, and the cumulative percentage of each region's population that has been immunized. The cumulative numbers and rates may be skewed slightly, as individuals are divided into regions based on the site of vaccination; these charts do not account for individuals who were vaccinated in a region other than the region in which they reside. Vaccine administration data may change each week because of data submitted after the reporting deadline or because of corrections made to previously submitted data.

Data Quality Indicators

Percentage of Sites Represented in the Current Week's Data for the Following Sections:

Outpatient Influenza-like Illness Surveillance — 69% (48 of 70 ILINet sites)

Hospital Admissions for Pneumonia or Influenza Surveillance (EMSystems) - 61% (81 of 132 hospitals)

School Absenteeism Surveillance— 81% (85 of 105 counties)

Appendix - Number and County Location of ILINet Clinic Sites

Allen	1
Barton	2
Brown	1
Butler	1
Cherokee	1
Cheyenne	1
Clark	1
Cloud	1
Cowley	1
Crawford	1
Dickinson	3
Douglas	2
Ellis	2
Finney	1
Ford	1
Franklin	1
Geary	2
Grant	2
Greenwood	1
Harvey	1
Jefferson	1
Johnson	5
Kiowa	1
Labette	1
Leavenworth	1
Linn	1
Lyon	2
McPherson	1
Meade	1
Montgomery	2
Neosho	1
Pottawatomie	1
Pratt	1
Reno	2
Riley	3
Saline	2
Sedgwick	6
Seward	2
Shawnee	
Sherman	1
Wichita	1
Wyandotte	6

Appendix - List of Hospitals Included in Hospital Surveillance Section for Current Report

CENTRAL KANSAS MEDICAL CTR GREAT BEND

CITIZENS MEDICAL CENTER COLBY

CLOUD COUNTY HEALTH CENTER CONCORDIA

COFFEY COUNTY HOSPITAL BURLINGTON

COFFEYVILLE REGIONAL MEDICAL CENTER

COMMUNITY MEMORIAL HC MARYSVILLE

EDWARDS CO. HOSP, AND HC CTR, KINSLEY

ELLINWOOD DISTRICT HOSPITAL

FREDONIA REGIONAL HOSPITAL

GALICHIA HEART HOSPITAL

GEARY COMMUNITY HOSPITAL JUNCTION CITY

GOODLAND REGIONAL MEDICAL CENTER

GRAHAM COUNTY HOSPITAL HILL CITY

GREAT BEND REGIONAL HOSPITAL

GREELEY COUNTY HEALTH SERVICES TRIBUNE

GREENWOOD COUNTY HOSPITAL EUREKA

GRISELL MEM. HOSP. DIST. NO. 1 RANSOM

HARPER COUNTY HOSP DIST NO 6 ANTHONY

HIAWATHA COMMUNITY HOSPITAL

HILLSBORO COMMUNITY HOSPITAL

HODGEMAN CO HEALTH CENTER JETMORE

HOLTON COMMUNITY HOSPITAL

JEFFERSON CO. MEM. HOSPITAL WINCHESTER

JEWELL COUNTY HOSPITAL MANKATO

KANSAS MEDICAL CENTER ANDOVER

KEARNY COUNTY HOSPITAL LAKIN

LANE COUNTY HOSPITAL DIGHTON

LAWRENCE MEMORIAL HOSPITAL

LINCOLN COUNTY HOSPITAL

LOGAN COUNTY HOSPITAL OAKLEY

MEDICINE LODGE MEMORIAL HOSPITAL

MEMORIAL HOSPITAL MCPHERSON

MERCY HOSPITAL INDEPENDENCE

MERCY HOSPITAL MOUNDRIDGE

MERCY REGIONAL HEALTH CENTER MANHATTAN

MIAMI COUNTY MEDICAL CENTER PAOLA

MINNEOLA DISTRICT HOSPITAL

MT. CARMEL REG MEDICAL CTR PITTSBURG

NEOSHO MEMORIAL RMC CHANUTE

NEWMAN REGIONAL HEALTH EMPORIA

NEWTON MEDICAL CENTER

NINNESCAH VALLEY HEALTH SYS. KINGMAN

NORTON COUNTY HOSPITAL

OLATHE MEDICAL CENTER

OSWEGO COMMUNITY HOSPITAL

OTTAWA COUNTY HEALTH CENTER MINNEAPOLIS

PHILLIPS COUNTY HOSPITAL PHILLIPSBURG

PRATT REGIONAL MEDICAL CENTER

PROMISE REGIONAL MEDICAL CENTER HUTCHINS

RANSOM MEMORIAL HOSPITAL OTTAWA

REPUBLIC COUNTY HOSPITAL BELLEVILLE

ROOKS COUNTY HEALTH CENTER PLAINVILLE

RUSH COUNTY MEMORIAL HOSPITAL LACROSSE

SABETHA COMMUNITY HOSPITAL

SALINA REGIONAL HEALTH CENTER

SATANTA DISTRICT HOSPITAL AND LTCU

SCOTT COUNTY HOSPITAL

SEDAN CITY HOSPITAL

SHAWNEE MISSION MEDICAL CENTER

SHERIDAN COUNTY HEALTH COMPLEX HOXIE

SOUTH CENTRAL KANSAS RMC ARKANSAS CITY

SOUTHWEST MEDICAL CENTER LIBERAL

ST. CATHERINE HOSPITAL GARDEN CITY

ST. FRANCIS HEALTH CENTER TOPEKA

ST. LUKE HOSPITAL AND LIVING CTR MARION

ST. MARYS HEALTH CENTER ST. MARYS

STAFFORD DISTRICT HOSPITAL

STANTON HEALTH CARE FACILITY JOHNSON

STORMONT VAIL HEALTHCARE TOPEKA

SUSAN B. ALLEN MEM. HOSPITAL EL DORADO

UNIVERSITY OF KANSAS HOSPITAL

VIA CHRISTI REGIONAL MED CTR WICHITA

WAMEGO CITY HOSPITAL

WASHINGTON COUNTY HOSPITAL

WESLEY MEDICAL CENTER WICHITA